An Application Lecturing Events Unit Based On Web Services

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Abstract

Web service technology is a technology that allows devices with different platforms can communicate with each other using JSON format (Java Script Object Notation). This technology can be applied to various fields, one of them in the academic field. Students sometimes do not know about what topics will be discussed at the next meeting, and also sometimes they do not know whether there are tasks or exam given by their lecturer. The purpose of this study was to implement PHP JSON Web services technology in android devices so that students can find out in detail about what will be discussed at each meeting and learning, and also be able to know what the task given by the lecturers and when the test will be conducted. This study was prepared by the method of prototyping. This research has been done and has resulted in an application that has been tested. Applications are made to assist students in obtaining detailed information about what to do at each meeting and learning, and also provide benefits for faculty where they can assign tasks to students online.

Kata Kunci: *Web service*s, JSON, Java, XML, , Android, , Prototyping, PHP.

Introduction

Events Unit Class (EUC) is the details of the arrangement of lectures, such as the materials discussed or studied in every meeting, learning objectives, and also various references to the subjects being taught or learned. Not only was EUC helps determine the success or failure of teaching activity takes place, the better an arrangement that existed at EUC, the better the learning process - teaching and running. EUC compiled by lecturers starting material rendition, media used and what needs to be done by the students. Therefore by knowing information about the existing EUC, students will be better prepared to follow the teaching and learning process.

Faculty of Computer Science at the University of Klabat, EUC has not been distributed properly to students, given EUC has an important role in any learning activities that take place in any given school year. EUC not only establish an activity directed studies course, but EUC can create interaction between faculty and students indirectly if distributed properly. Seeing this gap researchers decided to develop an application based on Android Unit Class event by using the web service.

Conceptual Framework Application

EUC can be viewed by students is a course that is being taken by the students. This also applies to the faculty, where lecturers can only perform CRUD operations on EUC courses they teach. In general, the conceptual framework application built by the authors can be seen in Figure Conceptual Framework The following applications:

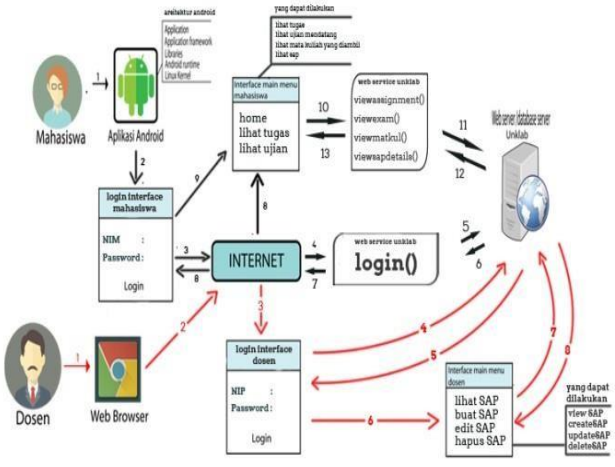


Figure 1 Conceptual Framework Application

In the picture Conceptual Framework Application, there are two inter-related applications, namely the application android (black arrow) and web pages (black arrow).

Android application created to make it easier for students to access EUC, while the web page is made that the lecturers can easily perform CRUD operations on EUC.

 Android apps (black arrow)

1. Students access the application from their Android device.
2. At the time the application is run, directly login interface is displayed even without an internet connection.
3. Log students using NIM and password. Students can enter it in the space provided. To be able to login, students must have an internet connection
4. Once connected to the Internet, call the web service application "login" to authenticate the account. Within this there is a web service query MySQL to get the student data that is logged if the NIM and password are correct, and return it in a JSON format.
5. The Web service login unklab access the database server to match the NIM and password
6. The results are returned to the web service
7. If the username and password successfully, the login web service returns the student data obtained to android application in order to go to the main menu display
8. Data student was taken to the main menu display
9. Depending on what is chosen menu the students, the application will call the web service that has been determined for each menu.
10. Web service that is invoked to retrieve data from the database Unklab
11. The database returns the data obtained to the web service
12. Web service returns the data obtained in JSON format
13. The data obtained is parsed and displayed in the application

 Web page (red arrows)

1. Lecturer access web pages via a web browser of their choice
2. Internet access required to be able to open a web page EUC Nikken Unklab
3. Once connected to the Internet, pages can be accessed, and will be displayed menu login to be on the web.
4. Lecturer enter the NIP and password and the web page will authenticate the data entered by fitting it to the database Unklab.
5. The results are returned to the web page
6. If the results are successful, then the teacher can go to the main page of the web page EUC Unklab
7. Depending on what menu chosen by the lecturer, the application then retrieves data from a database Unklab.
8. The data obtained is displayed on web pages EUC Unklab

2.2 Use Case

This Use case diagram describes user interaction and systems.

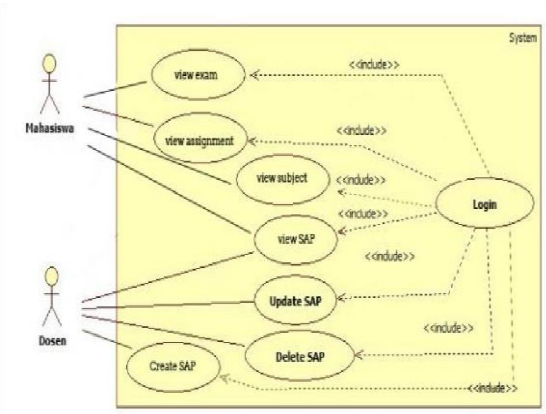


Figure 3 Use Case Diagram

2.3 Class Diagram

Class Diagram aplikasi EUC Unklab berbasis Android menggunakan Web

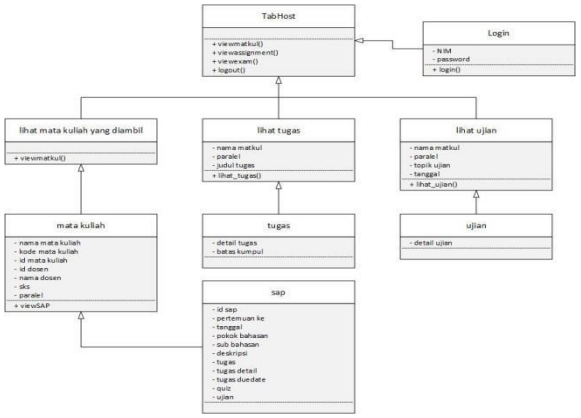


Figure 2 Class Diagram

Figure 3 is a class diagram design results of the analysis conducted by researchers in developing Android-based EUC applications using the web service. In the class diagrams created nine main classes that are interconnected between one class with another class.

2.4 Interface

Here is a snippet of code to display the login screen :

```
     @Override     protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_logi n);

        //setup input fields
        tfnim                       =
(EditText)findViewById(R.id.tfnim);

        tfpassword                  =
(EditText)findViewById(R.id.tfpasswor d);

 //setup buttons
 Buttonlogin                        =
(Button)findViewById(R.id.buttonlogin
```

Figure 4 Login View

Figure 4 is a login display menu . This display is the first display to be visible to the user when they first run the application.

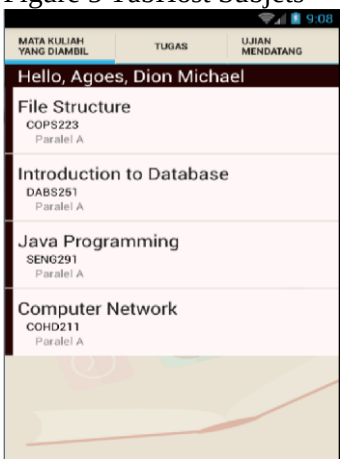
2.5 Tabhost Interface

Here is a snippet of code to display a Host Tab. From this screen the user can see the courses taken , see the tasks that have not been collected and can see the upcoming exam .

```
@Override
    protected          void          onCreate(Bundle
savedInstanceState) {          super.onCreate(savedInstanceState);
setContentView(R.layout.activity_tabhost);          Bundle ni =
getIntent().getExtras();
        String niml = ni.getString("nim");
        String namal = ni.getString("nama");
        TabHost th = (TabHost) findViewById(android.R.id.tabhost);
        TabHost.TabSpec spec = th.newTabSpec("Tab 1");
        Intent           i           =           new
Intent(this,Activity_View_Taken_Matkul.class);
        i.putExtra("nimlogin", niml);
        i.putExtra("namalogin", namal);          spec.setContent(i);
spec.setIndicator("home");          th.addTab(spec);

        TabHost.TabSpec spec2 = th.newTabSpec("Tab 2");
        Intent       a       =       new       Intent
(this,ActivityAssignment.class);

        a.putExtra("nimlogin", niml);          spec2.setContent(a);
spec2.setIndicator("assignment");           th.addTab(spec2);

        TabHost.TabSpec spec3 = th.newTabSpec("Tab 3");
        Intent           b           =           new
Intent(this,ActivityExam.class);
        b.putExtra("nimlogin", niml);          spec3.setContent(b);
spec3.setIndicator("Upcoming Exam");          th.addTab(spec3);
```

Here is a view of the display TabHost :

Figure 5 TabHost Subjets



6. Summary

Based on the study the researchers did, with the implementation of application Unit Class EventBased Android by Web service on the Faculty of Computer Science University Klabat, Nikken Unklab Students can easily see the information EUC courses they take, which includes the details of what was done and discussed at each meeting, and if at the meeting the lecturer give the task or not, no exams or not, and there is also a quiz or not. This application can only be used on Android operating system version 4.0 (Ice Cream Sandwich) - 4.4 (Kitkat) so hopefully in the next developer to be able to make this application runs on Android version afterward like lollipop. This application also has no navigation feature / These Augmented Reality direction on the menu and the Satellite View on Map View. It would be better as well as help when an application is developed with the added menu. This application is also only runs on android platform only. Expected in the next developer to be able to update the data in the latest gas stations if there is a change and make this application run on another platform.

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The Use of Information Literacy and Technology for Lifelong Learning

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Abstract

This research paper is designed to provide information about literacy behaviors of students at Pacific International University, Muek Lek, Saraburi Province, Thailand. It focuses on the process and methods used by students in course-related research assignments and in doing personal research. It reveals that 1) most students (respondents) worked mainly on class presentation reports and used search engines as resources, 2) most evaluated information available online by considering the currency of the contents, and asking classmates for help in evaluating sources, and 3) for course-related research, it was found that students who responded used Google Notebook and began with key word searches as productivity tools. Course-related research was important to students for the completion of assignments. The difficulty with different stages in the research process was evaluated after they found the information for which they were looking.

The findings about information seeking behavior by students for personal, everyday life research shows that most students who responded 1) explored news/current events; 2) used search engines as a resource, and 3) evaluated sources by considering the currency of contents. The difficulty for students during stages of the research process was knowing that the information they were looking for must be available somewhere online but not being able to find it. When information seeking behavior for course-related research assignments and that associated with everyday life research were compared, it was found that in both cases, students approached classmates to evaluate web sites according to the currency of content. Even in difficult stages of the research process using key word searches, students did not seek assistance from the librarian, either to evaluate sources or to recommend web sites. The practice of asking classmates to evaluate sources was the same for both course-related research and doing personal research for matters relating to everyday life.

Introduction

Rapid increase in the availability of online information and ongoing technological advances have brought challenges in the use of information and technology for lifelong learning. In the context of higher education in Thailand, emphasis is placed on effective lifelong learning for Thai learners (National Education of Thailand, No.2:2545 and No. 3: 2553). Students at the higher levels of study need to develop their research and critical thinking skills in order to prepare for their lives beyond the academy in the 21st century.

Information literacy impacts the learning process, and students need to have the ability to locate, evaluate, and make effective use of information. Many studies have been done by Project Information Literacy (PIL) about information literacy, and these can help students to become better learners. Maitaouthong (2011) points out that teaching and learning processes included in General Education courses were found to be effective ways to inculcate information and increase the literacy skills of students.

United Nations Educational, Scientific and Cultural Organization (UNESCO) and International Federation of Library Associations and Institution (IFLA) have played an important role in promoting information literacy at the international level through conferences, meetings of experts, and training programs. In November 2010, UNESCO organized a meeting featuring experts on Media and Information Literacy Indicators in Bangkok, Thailand. After the meetings have done, the need for a survey initiative which aims at studying information literacy practices of college students in Asian countries was pointed out. A large-scale survey can help to provide credible baseline data that can be utilized in developing information literacy indicators. However, these surveys should be done at difference universities so they can

share and analyze the data gathered.

The services offered by libraries can help to improve the literacy and informationgathering skills, but not everyone takes advantage of these services. This survey has been taken to seek ways in which libraries can be more effective in offering their services to students.

Objectives of the Study

1. To study information literacy practices of students at AIU.
2. To study of research methods, strategies, and skills that are effective for life-long learning.

Literature Review

This review of literatures focuses on: undergraduate student information literacy skills; the teaching of information literature; and the roles of library in information literature in Thailand.

Student information literacy skills in Thailand

It has been found that students commonly use internet sources, but make little use of the library. Jiaokok, 2004, Jais-ard, 2004, Phranimit, 2009 have done studies to assess information literacy skills of students in a particular university or subject discipline. In these studies, a test or questionnaire that was developed using existing standards as a framework, such as the ACRL Information Literacy Competency Standards for Higher Education, was used as an assessment tool. They found that Thai students had a moderate level of information literacy skills. Also the study of information literacy behaviors of Asia-Pacific International University showed the difficulty of research process by using the key word searches which students may struggle with. They knew the answer is somewhere online yet it could not be found (Wongsate, 2012). However, one study reported low levels in critical thinking, the use of skills in analysis and synthesis, and in IT skills among nursing students (Srisudta, 2006). A survey of information literacy practices of college students in Thailand have done as a collaborative project of six public universities in Thailand. They found the personal research skill was at low level of practices because they did so little for everyday life research. Students used different evaluation criteria in evaluating sources reflected a lack of information evaluation skills. (Cheunwattana, Wareesa-ard, Warunyanugrai, and Trelojwong, 2011). In most studies, the discipline was found to be an influential factor which determined students' levels in information literacy skills.

How to teach information literacy

The content of library instruction in information skills courses should be designed to meet the needs of students in different disciplines, and various different teaching methods are needed to enhance better learning outcomes (Pawinun, 2003). Information literacy instruction has been delivered primarily in a stand-alone General Education course by the Department of Library and Information Studies (Ketchard, 2007).The integration of information literacy into curriculum that librarians and faculty members collaborate together to support students' information literacy skills through the web- base instruction was proved to be an effective pedagogical approach (Techataweewan, 2008). For undergraduate education, integrating of information literacy into the teaching and learning processes of General Education courses was found to be another effective way to inculcate information literacy skills in students (Maitaouthoug, 2011).

How the library can help to improve information literacy

Praditteera, (2013), and Wongsate, Sukphongthai, and Rujirekroungrong, (2012) collaborated with four libraries in a benchmark study to discover the role of the library in information literacy promotion. The libraries worked together to share and develop good practices in information literacy promotion. Lists of promoting activities are as following:

1. All libraries offer a 1-3 credit course on information literacy development, either as a required or an elective course.
2. An online database searching course has been provided in every library for both students and lecturers.
3. Library orientation is a common event organized for the freshmen in every library.
4. Every library provides a library tour, both online and offline. One library offers a virtual library tour on its website.

5. Workshops for training trainers on online database searching have been employed, with lecturers and librarians meeting from 35 times a year in some libraries.
6. Some libraries offer a research literacy workshop for lecturers and graduate students.
7. Some libraries organize activities and events that encourage students to develop their own skills, including information searching competitions; reading and writing promotion campaigns, library and book club, etc.
8. One library offers librarian liaison services on specific subject inquiries of students and lecturers.

Methodology

This is a cross-sectional survey research. The preparation of a instrument, the selection of a population and sample, the data collection, and data analysis are discussed. .

Instrument

The data collection tool used in this survey is a questionnaire developed by the PIL project team at the iSchool of the University of Washington in the USA. This questionnaire was reformatted in table form by Dr.Pradeepa Wijetung from Sri Lanka. In January 2010, the reformatted questionnaire was translated into the Thai language by Mrs. Lapapan Choovongse, the former information officer at the UNESCO Office in Bangkok. The Thai version of the questionnaire was sent to research teams in participating universities who provided input for refining the translation to make question items easy to understand while keeping their original content. Questions concerning the background characteristics of respondents (i.e., field of study, grade point average, and age group) were slightly adjusted to suit the context of the Thai education system. The refined questionnaire consists of three parts: Part 1, Background Characteristics of Respondents; Part 2,
Information Literacy Practices in Conducting Course-related Research Assignments; and Part
3, Information Literacy Practices in Conducting Everyday-life Research. This questionnaire was pre-tested on a group of forty undergraduate students who were studying in different fields at AIU and did not participate in this research. The pretest result confirmed the reliability of the instrument, with a Cronbach's alpha coefficient of 0.87

Population and sample

The population of this research was consisted of Thai's 597 students enrolled in the academic year 2011-2012 at AIU. A stratified random sample of 324 was drawn from the student population. The sample size was determined by using Krejcie and Morgan's (1970) formulas.

Data collection and analysis

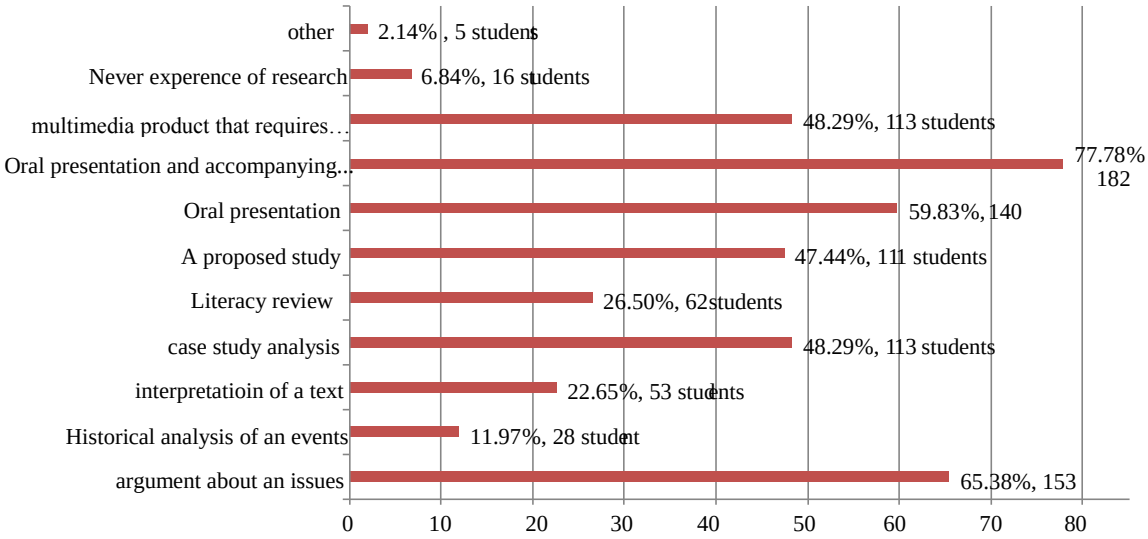
The data was analyzed by a computer statistical program. Calculation of scores in demographic data and each section used descriptive statistical analysis such as the average, percentage, and standard deviation.

Findings

Findings of this study on the information literacy behaviors of students at Asia-Pacific International University are presented in three parts: 1) Background characteristics of respondents, 2) Information literacy practices in conduction course-related research assignments, and 3) Information literacy practices in conducting everyday life research.

Background characteristics of respondents Of the 324 respondents in the field study, the majority of respondents revealed 81.61 percent were female, 58.97 percent were nursing majors, 49.14 percent were in the 18-20 age group, 30.34 percent were studying in the second year, 58.97 percent were in the field of nursing majors, and 30.77 percent had a Grade Point Average (GPA) between 2.51-3.00.

Figure 1 : Type of assignments



Information literacy practices in conduction course-related research assignments

Findings concerning information seeking behavior of students for course-related research assignments (process) indicate that 77.78 percent who responded worked mainly on class presentation reports. Of these, 55.56 percent evaluated information they found in libraries by considering authorship of contents, 21.37
percent evaluated online information by considering the currency of the contents, and 13.68 asked classmates to help evaluate sources.

It was found that, for course-related research, 18.38 percent of respondents began with key word searches and 58.12 percent used Google notebook. Course-related research was important for 43.59 percent of the students in order for them to complete assignments, and 15.81 percent had difficulty with evaluating research information after they found it.

Table 1: Productivity tools for curse-related research tasks.

Productivity tools	used 4	Not used 3	Don't remember 2	Never heard of this before 1	total
1. Highlighting feature for underlining text on a computer screen	94 40.17%	88 37.61%	41 17.52%	11 4.70%	234 100%
2. Digital "sticky notes" for use with a computer(e.g., Post – It digital notes)	50 21.37%	121 51.71%	32 13.68%	31 13.25%	234 100%
3. Citation-making programs (e.g.,RefWorks, EndNote, EasyBib, Zotero)	57 24.36%	107 45.73%	37 15.81%	33 14.10%	234 100%
4. Social bookmarking (e.g., digg, delicious)	53 22.65%	107 45.73%	52 22.22%	22 9.40%	234 100%

5. Alerting services (e.g., programs that sent automatic web feeds for newly appearing content)	73 31.20%	101 43.16%	38 16.24%	22 9.40%	234 100%
6. Microblogs (e.g., Twitter)	64 27.35%	107 45.73%	44 18.80%	19 8.2%	234 100%
7. Document sharing programs (e.g. Google Documents)	133 56.84%	71 30.34%	27 11.54%	3 1.28%	234 100%
8. Online time management programs with sharing (e.g., Google Notebook)	136 58.12%	73 31.20%	19 8.12%	6 2.56%	234 100%
9. Wikis for creating and sharing Web content (other than Wikipedia)	88 37.61%	95 40.60%	39 16.67%	12 5.13%	234 100%
10. Photo-sharing sites (e.g., Flickr, Photobucket)	85 36.32%	95 40.60%	35 14.96%	19 8.12%	234 100%
11. Virtual research environments	68 29.06%	98 41.88%	42 17.95%	26 11.11%	234 100%
12.Blogging (e.g., LiveJournal, Journal link)	46 19.66%	124 52.99%	38 16.24%	26 11.11%	234 100%
13. Voice over internet Protocol (e.g. Skype)	108 46.15%	88 37.61%	29 12.39%	9 3.85%	234 100%
14. An online forum where I can post a question and get an answer from someone.	78 33.33%	105 44.87%	33 14.10%	18 7.69%	234 100%

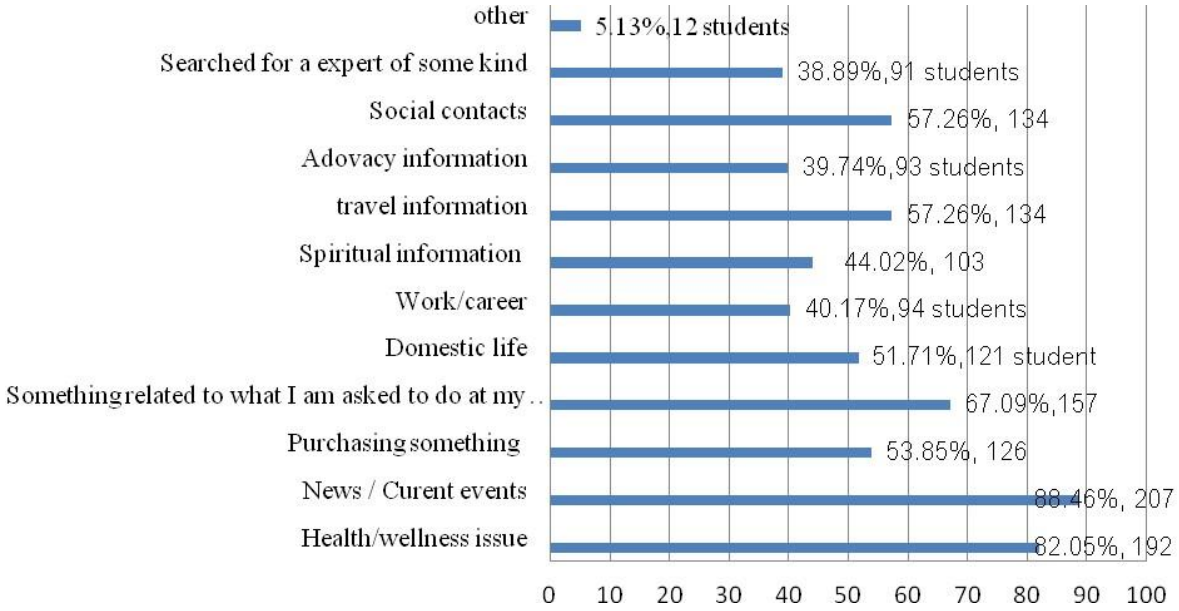


Figure 2: Everyday life research topic

Table 2: Evaluation's assistant with sources

People asked for assistant	Almost always 7	often 6	Sometimes 5	Rarely 4	Never 3	Don't know 2	No experience with this situation 1	Total
1. Instructors	23 9.83%	84 35.90%	78 33.33%	21 8.97%	26 11.11 %	1 0.43%	1 0.43%	234 100%
2. Librarians	12 5.13%	34 14.53%	71 30.34%	49 20.94%	57 24.36 %	5 2.14%	6 2.56%	234 100%
3. Classmates	32 13.68%	87 37.18%	78 33.33%	19 8.12%	16 6.84%	2 0.85	-	234 100%
4. Friends and family	28 11.97%	68 29.06%	71 30.34%	40 17.09%	22 9.40%	4 1.71%	1 0.43%	234 100%
5. Licensed professionals (i.e., physicians attorneys, therapists)	10 4.27%	40 17.09%	73 31.20%	46 19.66%	50 21.37 %	7 2.99%	8 3.42%	234 100%

Information literacy practices in conducting everyday life research

Findings about information seeking behavior for everyday life research (process) showed that 88.46 percent of students who responded explored news and current events. Of these, 49.15 percent used search engines to locate information, 16.67 percent considered the currency of contents in evaluating sources, and 18.38 percent asked classmates to help evaluate sources. One difficulty noted by 13.68 of the respondents in the process of conducting research was knowing that information they were seeking was accessible somewhere online but they could not find it. In the study it was found that 99.10 percent of students conducting everyday life research approached classmates to help them locate information, and 99.14 percent evaluated sources on the basis of currency of content. For 96.15 percent of these students, the most difficult stage in the research process for was knowing what key words to use in conducting searches.

Most students (86.15 percent) did not ask for assistance from the librarian to either recommend web sites or evaluate sources, The same practice of asking help from classmates in evaluating sources that was used in courserelated research process was used by 82.05 the students for evaluating sources in everyday life research. Also, some students found 13.68 percent is difficult for knowing the answer but not being able to find it.

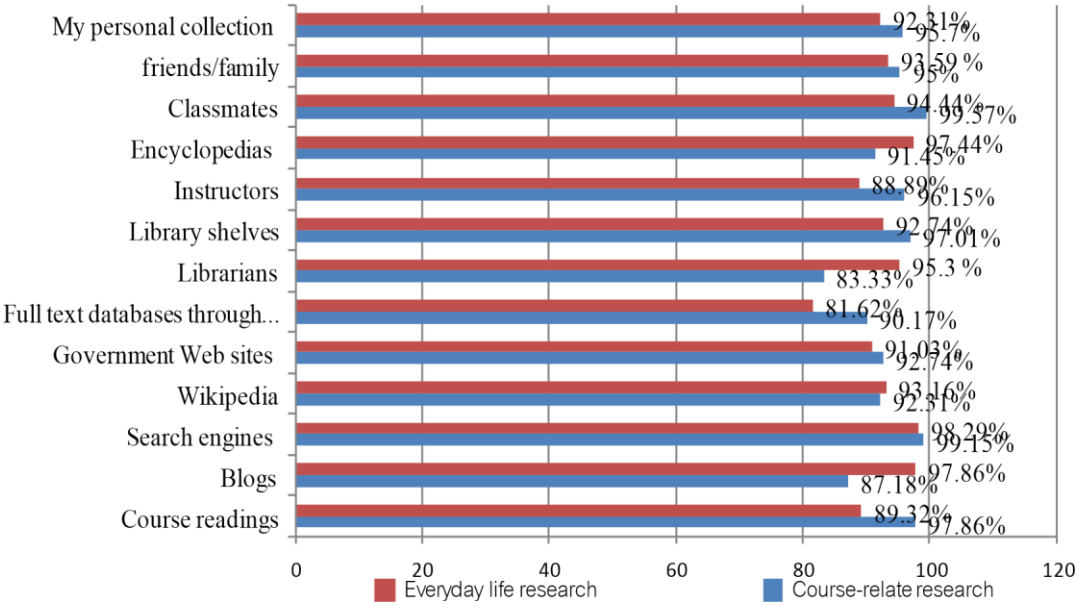


Figure 3: Comparing of very day life research and course-related research used.

Discussion of findings

Students with good information literacy are those who have learned effective research skills, strategies, and methods. They know how to find, evaluate, and use information to solve a particular problem or make a decision—whether the information comes from books, online, movies, or any other possible source. The results of this study show that different types of assignments were given to students, but those that help to enhance their ability to analyze (such as historical or case study analysis), synthesize, and interpret research information were given low priority. Students were found to rely largely on search engines 99.15%, but their skill in evaluating information sources was limited as demonstrated in Table 2. They relied

upon people such as classmate 13.68%, family members and friends 11.97%, and instructors 9.83% for help with evaluating various kinds of sources. In addition to using search engines to some extent, it is quite obvious that students tended to consult easily accessible information sources such as classmates, course readings, Wikipedia, and instructors. Library collections and librarian were used but not preferred sources. When asked to rate about the difficulty in doing everyday life research, the respondents selected only few topics research such as news or current events 88.46% and health

issues 82.05%. It means that students did little for everyday life research. Some student found difficult to know that the answer is somewhere online yet it could not be found is 13.68 percent. This point shows their inadequate skills in evaluating, searching, selecting and synthesizing information.

Findings from this study, students need help from librarian, teacher, and administrator by giving appropriate information instruction programs and curricula, and improving library services to make needed information conveniently available and accessible for students. In terms of teaching method, academic staff should consider teaching methods which encourage an active and self-directed approach to learning such as problem-based, research – based learning, and seeking lifelong – learning.

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